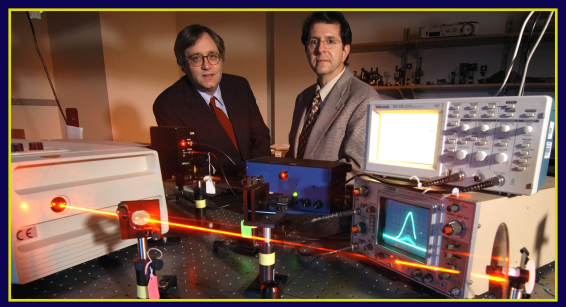
Institute Overview





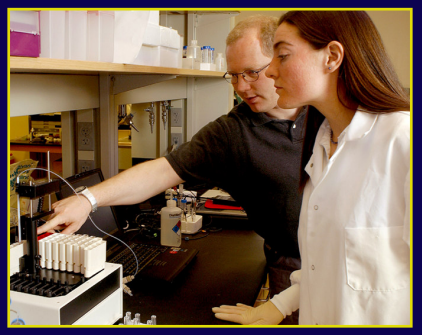
President G. Wayne Clough

Georgia Tech Research Corporation

December 13, 2005

Milestones

- Enrollment: 17,135
- Retention / graduation: 92% / 72%
- Career interviews: 8,400+
- Fund raising: $120 million
- Research expenditures: $425 million
- Invention disclosures: 300+
- Start-ups: 24 in past 2 years; 50 in past 5 years



New undergraduate programs

- Nanotechnology Certificate
  - 12 credit hours
- Research Option
  - 9 credit hours of research + thesis
- International Plan
  - 2 study abroad, courses in global economics and international affairs, capstone

Exceptional faculty

PECASE Awards:

Ali Adibi, ECE
William King, ME
David Anderson, ECE

Sloan Research Fellows:

Alex Kuzmich, Physics
Todd Streelman, Bio
Marcus Weck, Chem & Biochem

Fulbright Awards:

Fei-Ling Wang, Internat'l Affairs
Stuart Goldberg, Modern Lang
Carol Colatrella, LCC

CAREER Awards

Frank Dellaert, Computing

Monica Gaughan, Public Policy

Samuel Graham, ME

Milos Prvulovic, Computing

Roshan Vengazhiyil, ISyE

Sam Nunn: Benjamin Franklin Medal, Nobel Prize nominee

Atlanta Woman Magazine Top 10 Inventors

Barbara Boyan, BME
Beth Mynatt, Computing

Assisting the Gulf Coast

- NSF funds 3 Tech infrastructure damage assessment teams.
- Tech's Mid-America Earthquake Center studies bridge damage.
- GTRI trains cleanup workers.
- FEMA evaluates GTRI's plasma furnace system for use in waste disposal.
- Pres. Clough chairs NRC-NAE New Orleans Hurricane Flood Protection Committee.

Grad student Jamie Padgett

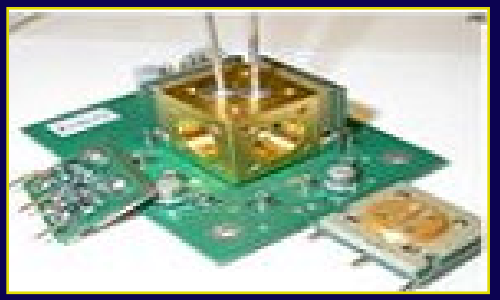
Ass't Prof Hermann Fritz

Ongoing research thrusts

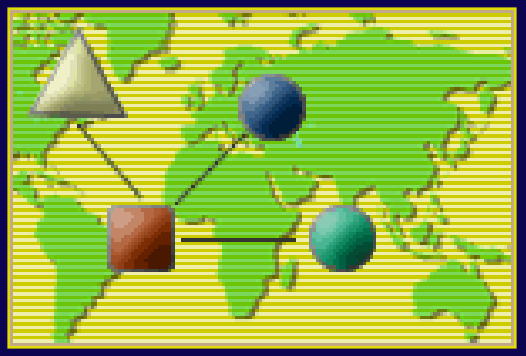
Sustainable technology

Nanotechnology

Biotechnology/ nanomedicine



Microelectronics/ telecommunications



Logistics

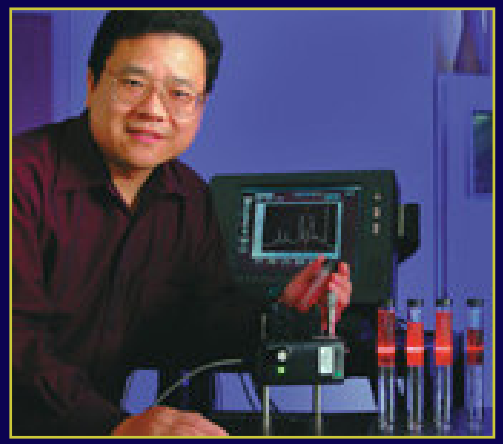
Photonics/optics

Manufacturing

Emerging research thrusts

"Nanotechnology… is sure to reshape every industry it touches."

Rick Karlgaard
publisher, *Forbes*



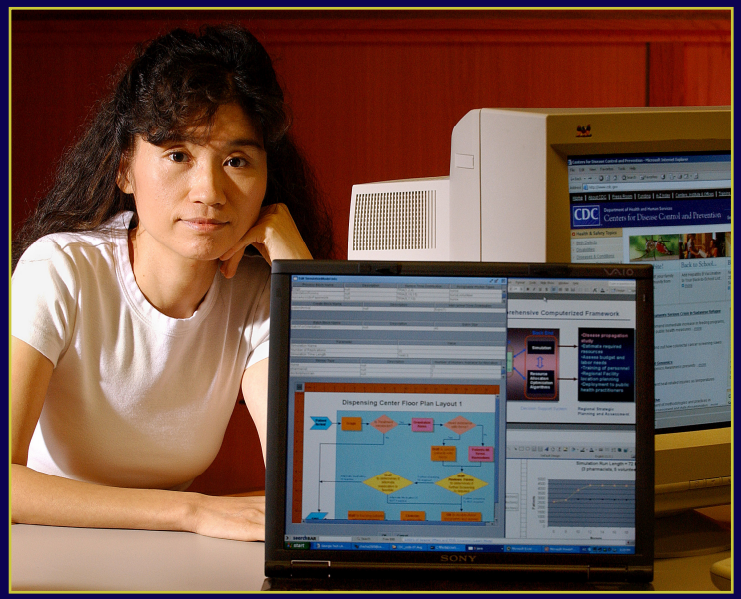
Biomedical Engineering Professors Shuming Nie and Gang Bao are pioneers in applying nanoscience and nano-technology to medicine.

Their work was critical in helping Georgia Tech and Emory attract a $19 million National Center of Cancer Nanotechnology Excellence.

Emerging research thrusts

"How many more Americans need to die to get an electronic health record?"

Newt Gingrich, author
Saving Lives & Saving Money



RealOpt, a computer program developed by ISyE Professor Eva Lee, will help state and local health departments manage an outbreak of infectious illness, natural or manmade.

Emerging research thrusts

"High performance computing is essential to the leading edge of U.S. research and development."

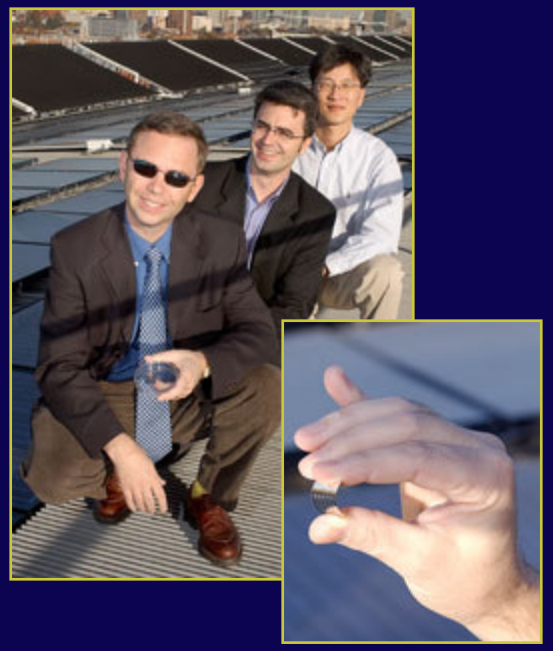
NSF Blue Ribbon Panel on High Performance Computing

This Dell cluster is among the world's 100 most powerful computers. It is an important tool for research in biological computing and other disciplines across campus.

New solutions for old problems

Strategic Energy Initiative

Collaborating with Southern Company to harness the power of wind off the Georgia coast.

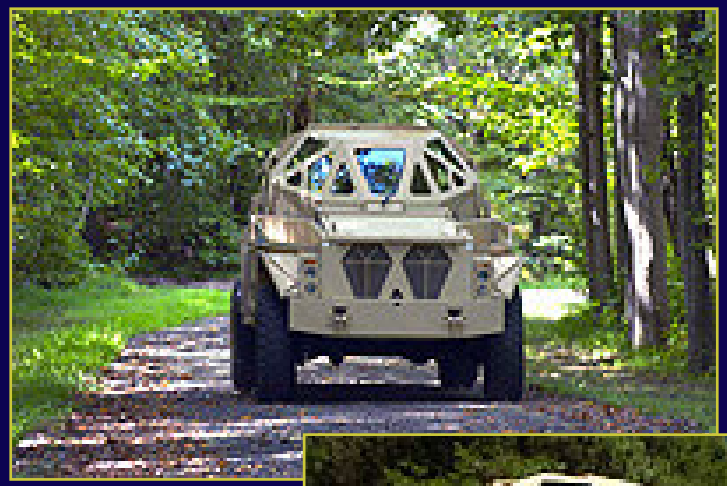


Developing the next generation of solar cells based on organic materials.

Replacing conventional batteries with smaller, longer-lasting microgenerators.

New solutions for old problems

Keeping soldiers safe

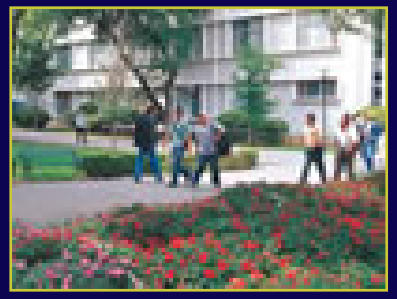


The ULTRA-AP is a concept vehicle, designed and built by GTRI to help the military evaluate multiple technological advances that will make future military vehicles safer.

Building international partnerships

Georgia Tech Lorraine

Technical Institute of Monterrey

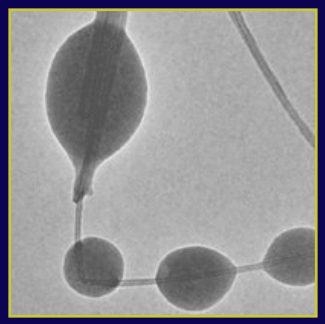


National University of Singapore

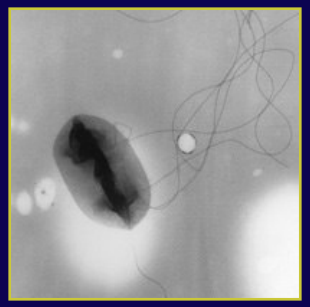
Shanghai Jiao Tong University

Technical University of Munich

International research partnerships

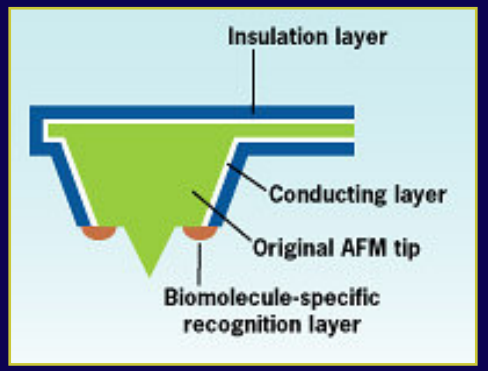


Physicists from Georgia Tech are on an international team studying the formation of carbon nanotubes.



Biologists at Georgia Tech and the John Innes Centre in the UK study e coli bacteria.

Researchers from Georgia Tech and the Vienna Institute of Technology developed a system that combines chemical and biological sensors.



Corporate partnerships

Samsung cuts the ribbon on its new research lab at Technology Square.

Pirelli announces its move to Technology Square.

Technology Enterprise Park

State-of-the-art facilities

Klaus Advanced Computing Building

Molecular Science and Engineering Building

Nanotechnology Research Center Building

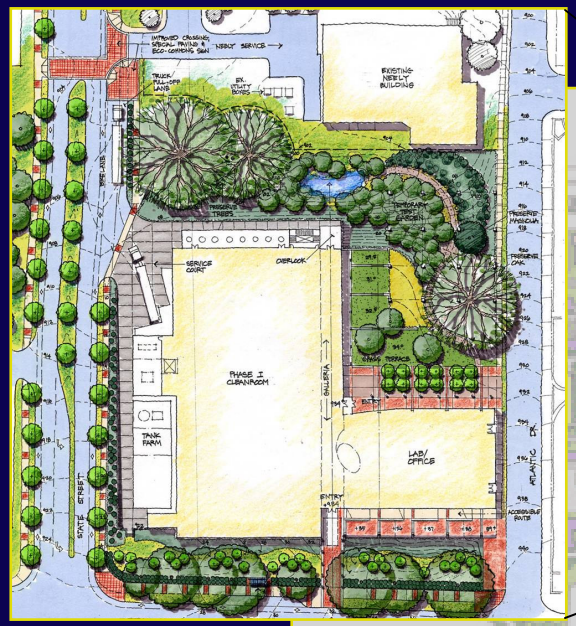
- 188,000 gross sq ft
- 30,000 sq ft of cleanroom labs
- $80 million-plus construction cost

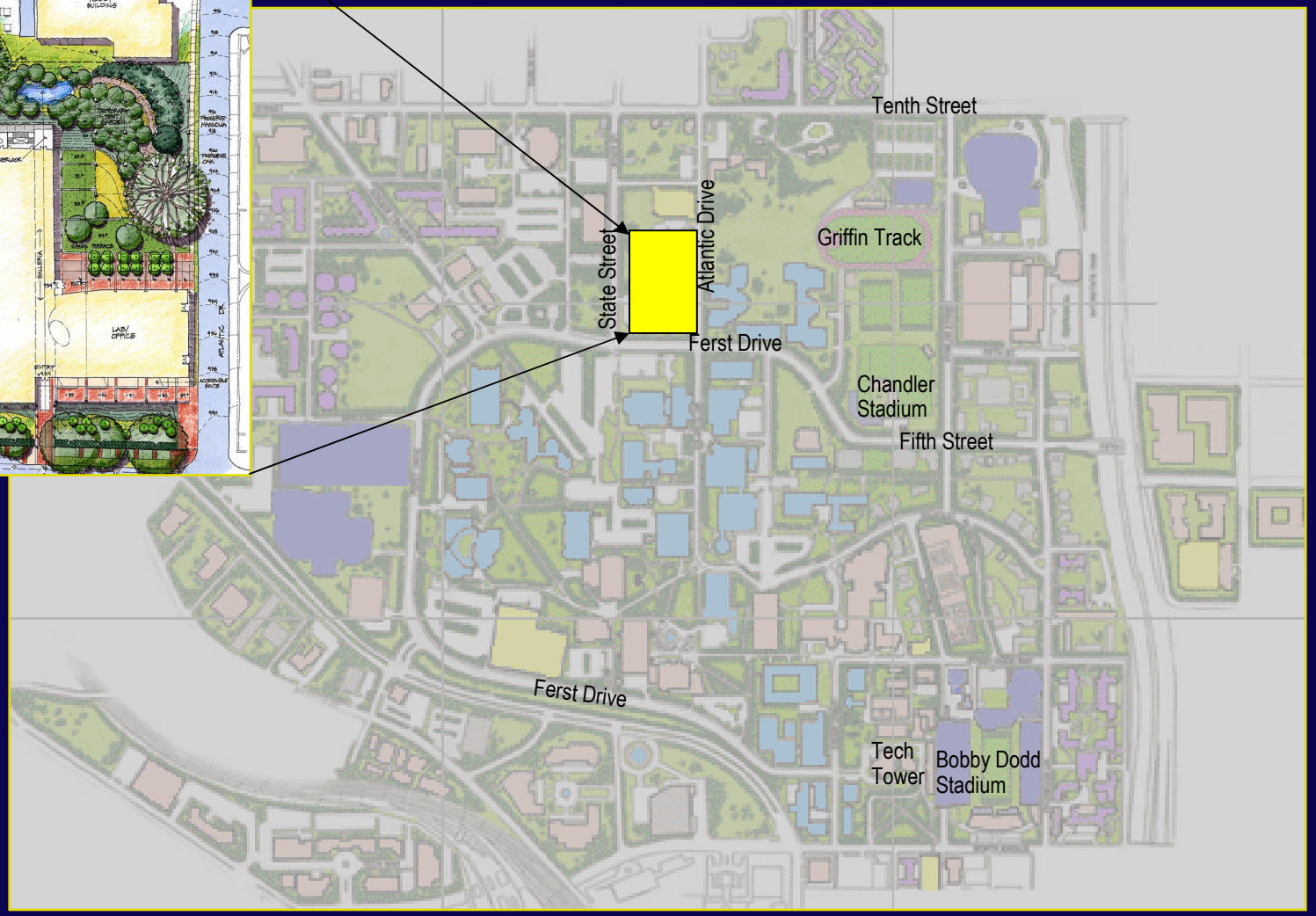
The Nanotechnology Research Center Building will allow Georgia Tech to become pre-eminent in the Southeast and among the leaders in the nation.

Unique advantages of GT's NRCB

- Large size
- Three "cleanest" classes of labs (10, 100, 1,000)
- Flexible design: lab environment can be reconfigured to serve differing research needs.
- Can handle both inorganic and organic.
- Nano-bio focus
- Multi-user access
- Interdisciplinary

NRC Building Location





Footprint

- Offices/prep labs are separated from cleanroom labs.
- Landscaping promotes sustainability.

Campus Master Plan